

Inside Microsoft Excel

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Microsoft releases Excel 97

On January 16, 1997, Microsoft released the newest version of Excel. Known either as Excel 97 or as Excel 8.0, this release continues the innovative tradition of previous versions. In fact, there are many more differences between this newest version of Excel and the previous one (Excel 7.0, also known as Excel for Windows 95) than there were between Excel 7.0 and the version that preceded it (Excel 5.0). In this article, we'll introduce you to many of Excel 97's new features, with particular emphasis on the features that make Excel 97 easier to use. We'll cover many of these features in greater detail in future issues of *Inside Microsoft Excel*.

Data-entry enhancements

Excel 97's workspace—shown in Figure A—looks a lot like the workspace of previous versions of Excel. However, each cell can hold 32,767 characters—over 100 times more than the 255 characters allowed by previous versions of Excel. Also, each Excel 97 worksheet has four times as many rows as previous versions: 65,536 as compared to 16,384. In addition, Excel 97 boldfaces and "raises" the letter(s) and number(s) of the columns and rows that contain the selected range. For example, the letter of column A and the number of row 1 are highlighted and raised in our sample workbook.

Figure A: Although the Excel 97 workspace looks a lot like the workspace in previous versions, there are a number of important differences.

If you look at the Formula bar of the workbook shown in Figure A, you'll notice that it's slightly different from the one in previous versions of Excel. (In fact, Microsoft now calls it a Formula Palette.) Specifically, it contains an = button. When you click that button, Excel will expand the Formula Palette and change the Name box (the area to the left of the Formula Palette) to a dropdown list of function names, as shown in Figure B. If you select one of those names, Excel will invoke an updated version of the Function Wizard, which steps you through the process of creating that function. (Choosing More Functions... from the list shown in Figure B displays the Paste Functions dialog box, which contains the name of every function available in Excel.)

Figure B: When you click the = button, Excel expands the Formula Palette and changes the Name box to a list of functions.

Excel 97 contains two other enhancements that make it easier to enter formulas and functions. First, Excel automatically corrects 15 of the most common errors you're likely to make while entering formulas, such as omitting parentheses and typing duplicate operators. When you press [Enter] to lock in a formula that contains one or more of those mistakes, Excel will present a Help alert that proposes a correction. In response to this box, you can click Yes to accept the correction or click No if you want to correct the formula yourself. For example, Figure C shows the Help alert box that Excel will present if you press [Enter] after you type `==(A1+A2` on the Formula Palette. As you can see, Excel suggests the formula `=(A1+A2)`.

Figure C: Excel 97 will suggest the formula `=(A1+A2)` if you press [Enter] after typing `==(A1+A2` on the Formula Palette.

Excel 97 also lets you use "natural language" formulas. (You could do the same thing in previous versions of Excel, but you had to use range names to do so.) Now, you can reference a cell on the basis of other entries in the same row and column as that cell. To demonstrate this feature, enter the text value *Sales* into cell A2 of a new worksheet, the numeric value 1997 into cell B1, the numeric value 123 into cell B2, and the formula

=Sales 1997

into cell C3. Figure D shows the result. As you can see, the formula returns the value from cell B2—the cell at the intersection of the row that contains the text value Sales and the column that contains the numeric value 1997. (The formula =1997 Sales will return the same result.)

Figure D: In Excel 97, you can use "natural language" formulas without assigning range names.

In addition to making formulas and functions easier to enter, Excel 97 makes them easier to edit. To change a reference within a formula in a previous version of Excel, you had to click on the Formula bar, highlight the reference you wanted to change, and click on (or drag across) the replacement cell or range. In Excel 97, you can simply drag the outline of the referenced cell. When you click on the Formula Palette while the active cell contains a formula, Excel will draw colored borders around the cells and/or ranges referenced by that formula. For example, Figure E shows what your screen will look like if you click on the Formula Palette while the active cell contains the formula =A1+B2. As you can see, Excel boxed cells A1 and B2—the two cells to which the formula refers. (Although you can't see it in the figure, Excel uses a different color for each cell or range and uses the same colors for the addresses displayed on the Formula Palette.)

Figure E: Excel 97's "range finder" feature makes it easy to change or expand the references in a formula or function.

Once you've clicked on the Formula Palette, you can change any address in the formula simply by dragging the colored border of the cell specified by that address. For example, you can change the formula =A1+B2 in cell C3 of the worksheet shown in Figure E to =A1+A2 simply by clicking on cell C3, clicking on the Formula Palette, dragging the colored border of cell B2 to cell A2, and pressing [Enter].

Another major Excel 97 data-entry enhancement involves data validation. To prevent users from making inappropriate entries in previous versions of Excel, you had to use IF(ISERROR()) formulas. In Excel 97, you can use the Data/Validation... command. When you issue this command, Excel 97 will display a dialog box like the one shown in Figure F. On the first page of this box, you specify the type of entry you want to allow (such as any value, a whole number, a decimal, or a date), a comparison operator (such as between, equal to, or less than), and the comparison value(s). On the second page, you can specify an input message—a message that Excel 97 will display when you select the cell to which the data validation applies. On the third page, you can specify the error message you want Excel to present if the user enters an invalid entry into that cell.

Figure F: The Data/Validation... command makes it easy to prevent users from making inappropriate entries.

Data-formatting features

In addition to its numerous data-entry enhancements, Excel 97 includes many new or improved data-formatting features. First, it completely changes (and greatly improves) the way you assign conditional formats—cell formats that differ depending on the magnitude of the entry in those cells. To do this in previous versions of Excel, you had to create custom formats whose definitions contained conditional tests that were enclosed in brackets. (For example, to make Excel display values less than 100 in blue, values between 100 and 200 in red, and values greater than 200 in green, you'd have to create a format with the definition [<100][Blue];[<200][Red];[Green].) In Excel 97, you can use the Conditional Formatting... command (located on the Format menu).

When you issue the Conditional Formatting... command, Excel 97 will display the dialog box shown in Figure G. Using this dialog box, you can specify up to three conditions, which can apply either to the value of a cell or to the formula or function that produces that value. For each condition, you can specify any combination of the following attributes: font, font style (such as bold or italic), font color, border, background color, and background pattern. To specify these attributes, you click the Format... button, then choose those attributes from a limited version of the dialog box Excel presents when you choose Cell... from the Format menu.

Figure G: In Excel 97, you can use the Format/Conditional Formatting... command to create conditional formats.

Excel 97's second new formatting feature is one that Excel users have been requesting for years—cells

of different heights in the same row, and cells of different widths in the same column. To do this, you expand the size of the cell so it occupies the space normally occupied by two or more cells. First, you select the range that has the cell you want to expand in its upper-left corner and covers the range you want that cell to occupy. Then, you pull down the Format menu, choose Cells..., click the Alignment tab, and click a new check box—Merge cells. When you subsequently click OK, Excel will expand the cell in the upper-left corner of the range so that it covers the other cells in the selected range. For example, Figure H shows the result of merging cells B2:C3 of an Excel 97 worksheet. As you can see, cell B2 now occupies the space formerly occupied by cells B2:C3.

Figure H: Unlike previous versions of Excel, Excel 97 lets you have cells of different heights in the same row, as well as cells of different widths in the same column.

Excel 97 also allows you to format text in three ways that weren't possible in previous versions of Excel. First, you can rotate the text in a cell to any angle from 90 degrees to -90 degrees—you're not limited to positioning it just horizontally or vertically, as in previous versions of Excel. To change the orientation of the text in a cell, you click on that cell, issue the Format/Cells... command, and click the Alignment tab—just as in previous versions. However, the dialog box that Excel displays when you issue this command contains an orientation pointer instead of buttons that specify four distinct orientations. To change the orientation, you simply drag the pointer to the angle you want. When you click OK, Excel will orient the text in the selected cells in the way you specified. For example, Figure I shows the result of changing the orientation of the text in cells B1:F1 to 45 degrees. As you can see, Excel slants the text in each of those cells at a 45-degree angle.

Figure I: Excel lets you orient cell entries at any angle from 90 degrees to -90 degrees.

Excel 97 also provides a better way to indent entries. To indent entries in previous versions of Excel, you had to use the [Spacebar] to insert spaces ahead of the entries you wanted to indent, or you had to insert narrow columns to the left of those entries. In Excel 97, you can indent entries with the Format/Cells... command. In addition to the orientation pointer, the Alignment page of the Format Cells dialog box contains the Indent spinner. To indent the entries in the selected cells, you simply specify the amount of indentation you want (in terms of characters) either by typing or by clicking the arrows on the spinner. Another new check box on the Alignment page of the Format Cells dialog box—Shrink to Fit—commands Excel to automatically resize the text in a cell to fit within the confines of the current column width.

Other ease-of-use features

Excel 97 has a number of other new and/or improved features that make it easier to use. First, it includes an updated help system. Instead of displaying the mundane help dialog boxes offered by previous versions of Excel, Excel 97 displays an animated "assistant" whenever you press the [F1] key or click the Help button. This assistant is accompanied by a balloon that suggests various help topics you might want to view. For example, Figure J shows what your screen might look like if you press the [F1] key while an empty cell is selected. As you can see, the "paper clip" assistant appears in a small window; it allows you to search for a particular help topic, see a list of tips, or set various help options. You can choose from among eight other assistants (including Albert Einstein, a caped dog, or William Shakespeare) by right-clicking the window that contains the current assistant, selecting Choose Assistant..., and using the Back and Next buttons in the dialog box that appears at that point.

Figure J: When you press the [F1] key or click the Help button, Excel 97 displays an animated assistant that leads you through the help system.

Excel 97's second additional ease-of-use feature is support for Microsoft's new Intellimouse. In addition to the two buttons found on ordinary mice, the Intellimouse has a small wheel located between them. By scrolling that wheel, you can zoom in and out of the worksheet or move up and down a worksheet or list. The wheel also serves as a button. Clicking it places Excel in "pan" mode. While in this mode, Excel shifts the worksheet in whatever direction you move the mouse. Clicking the wheel again lets you exit pan mode. Moving the mouse while holding down the wheel button pans the worksheet without permanently entering pan mode.

Another useful improvement is Excel 97's multiple-level Undo feature. In previous versions of Excel, clicking the Undo button (or choosing the Undo command from the Edit menu) reversed only one command or action. Once you issued the Undo command, Excel would change the name of that command to Redo. (Repeated clicking of the Undo button would undo and redo a single action.) In

Excel 97, the Undo button is accompanied by a downward-pointing arrow. If you click that arrow, Excel 97 will display a list of the last 16 actions or commands, such as the one shown in Figure K. You can undo any or all of those actions by selecting them from the list. (Unfortunately, you can't select one command or action without also selecting all the ones above it.)

Figure K: Unlike previous versions, Excel 97 features a multiple-level undo capability.

The Redo button works in the same way. Each time you undo a command or action, Excel adds it to the Redo list. You can selectively redo up to the last 16 actions by selecting them from the list that appears when you click the arrow accompanying the Redo button. The Undo and Redo commands (located on the Edit menu) are also sequential in nature. When you issue the Undo command, it doesn't change to a Redo command as it does in previous versions of Excel. Instead, it remains an Undo command, but it reverses the previous action. The Redo command works in the same way.

Excel 97 also solves the problem of dialog boxes obscuring ranges you want to view or select. To solve this problem in previous versions of Excel, you had to drag the dialog box out of the way—a process that's tedious at best. In Excel 97, every edit box that accepts the address of a cell or range is accompanied by a "shrink" icon that when clicked, shrinks the dialog box so that only the edit box is visible. This makes viewing and selecting the cell or range much easier. (You may, on occasion, still have to drag the minimized dialog box out of the way, however.) Once you've selected the cell or range, you can restore the dialog box to its original size by clicking the restore icon, which replaces the shrink icon when the dialog box is minimized.

For example, Excel 97 will present the dialog box shown in Figure L when you issue the Insert/Name/Define... command. As you can see, the shrink icon appears at the right edge of the Refers to: edit box. If you click that button, Excel will shrink the dialog box to the size of the Refers to: box, as shown in Figure M. Clicking the restore icon at the right edge of the shrunken dialog box will restore the box to its original size.

Figure L: Excel 97 solves the problem of dialog boxes getting in the way of ranges you want to view or select.

Figure M: Clicking the restore icon will return this dialog box to its original size.

Last but certainly not least, Excel 97 allows you to embed hyperlinks in your worksheets. Clicking a hyperlink instantly activates the cell or range specified by that link. To create a hyperlink, you select the cell or range you want to use as the source of the link, then click the Insert Hyperlink () button or choose Hyperlink... from the Insert menu. When you do either of those things, Excel 97 will display the dialog box shown in Figure N. Within this box, you specify the document to which you want to link. (Although this will typically be an Excel document, it doesn't have to be. It can be any other sort of document, or even an Internet address.) Optionally, you can specify a location within the document (for example, a cell or range within an Excel workbook or a bookmark within a Word document). Once you enter this information, you should click OK. From that point on, you can navigate to the location you specified simply by clicking the hyperlink.

Figure N: Excel 97 also lets you set up hyperlinks that make it easy to navigate between different documents.

Printing improvements

Microsoft also enhanced the printing capabilities of Excel 97. Specifically, it offers a page break preview mode. To access this mode, simply choose Page Break Preview from the View menu. You can also access this mode by issuing the File/Print Preview command and clicking the button labeled Page Break Preview. In either case, Excel will display a version of the worksheet that shows the entire print area with the page breaks and page numbers superimposed on it. For example, Figure O shows the page break preview for a sample worksheet. As you can see, the current print area requires two pages; the page break is between columns H and I.

Figure O: The page break preview mode allows you to alter the page breaks and print area by dragging them with your mouse.

While Excel 97 is in page break preview mode, you can move page breaks simply by pointing to them, holding down your mouse button, and dragging. You can move the borders of the print range in the

same way. In addition, you can do anything you normally do to the worksheet—enter and clear information, assign formats, move and copy entries, and so forth. To return to normal mode, simply pull down the View menu and choose Normal.

New and improved charting features

Excel 97 offers several improved charting capabilities. First, each series can have up to 32,000 data points—up substantially from the mere 400 data points allowed in previous versions of Excel. Second, Microsoft improved the Chart Wizard in a number of ways. For example, the first Chart Wizard dialog box contains a button labeled *Press and hold to view sample*. When you hold down that button, Excel 97 will show you what the currently selected data will look like in the format you've specified. Excel 97 also lets you use the Chart Wizard dialog boxes to modify existing charts—not just to create them, as in previous versions of Excel. To do this, you use new commands on the Chart menu. For example, the first command on this menu—Chart Type—presents the first Chart Wizard dialog box, the second command—Source Data...—presents the second Chart Wizard dialog box, and so forth.

Excel 97 offers several new types of charts, including cylinder charts, pyramid charts, cone charts, and bubble charts. For example, Figure P shows a simple cylinder chart. As you can see, each value in the series is represented by a cylinder instead of a rectangular column. Excel 97 also has a number of built-in custom types, including truncated cones, floating bars, and tubes.

Figure P: Excel 97 features several new types of charts, including cylinder charts.

In addition to these new and improved charting features, Excel 97 supports the use of time-scaled axes. It also allows you to include hard data tables—small spreadsheet-like tables that display the source values for a chart—directly within the chart. In addition, you can use patterns and pictures to format chart walls, floors, and the faces of three-dimensional charts. Excel 97 also has an improved charting toolbar, offers helpful tips that identify whatever part of the chart you point to, and lets you select individual structures with a single click of the mouse.

Visual Basic

As you can see, Microsoft made many significant changes to Excel 97's worksheet and charting environments. However, it changed Excel's programming environment even more dramatically. You no longer create procedures in module sheets. (In fact, Excel 97 doesn't even give you the option of inserting module sheets into your workbooks.) Instead, you edit macros in the Visual Basic Editor. To access this editing environment, you pull down the Tools menu, choose Macro, and select Visual Basic Editor. When you do this, Excel will present the editor, as shown in Figure Q. As you can see, this environment has its own unique menu bar and toolbar. In addition, it features a hierarchical object browser, a multipane debugger, a property sheet, a project explorer, and a statement builder. It also does handy things like displaying the syntax of statements as you type them.

Figure Q: Excel 97 introduces an entirely new Visual Basic editing environment.

As if the entirely new Visual Basic editing environment weren't enough, Microsoft added several other new programming features to Excel 97. These include 62 new events, ActiveX controls, more programmatic control over pivot tables, and macro virus protection. It also offers Office forms (giving Excel programmers access to the code behind the forms, which features rich event handling and support for ActiveX controls) and a Data Mapping Object model (making it easier for developers to incorporate geographic mapping functionality into customized solutions).

Other new and improved features

The list of new and improved features goes on and on. For example, Microsoft added more power to Excel's already powerful pivot tables, including structured selection, persistent formatting, and calculated fields and items. Microsoft also increased Excel 97's workgroup functionality with color-coded and annotated tracking of changes, the ability to accept or reject changes, workbook merging, and timed updates. Furthermore, Excel 97 includes an improved Microsoft Excel Viewer, which allows users to publish Excel files for people who don't have Excel.

One of the most significant changes to Excel 97 is in the area of Internet access. To begin, Microsoft included the Excel Internet Assistant (an add-in available for previous versions of Excel) directly within

Excel 97. But that's only the tip of the iceberg. Excel 97 features a Web Toolbar (which provides a Web browser-like navigation interface that makes it easier to access hyperlinked documents), an advanced search facility, and the ability to use the File/Open... command to access Excel or HTML files from the HTTP or FTP servers. Excel 97 also includes a Web Form Wizard—which leads you through the process of connecting an Excel form to a Web server—as well as new HTML extensions that enable pivot tables, autofiltering, formulas, and spreadsheet formatting in HTML tables.

Conclusion

Excel 97—the newest version of Microsoft Excel—is clearly a giant leap ahead of previous versions of Excel, in terms of both functionality and features. In this article, we provided an overview of many of this release's significant new features. We'll look at several of those features and improvements in detail in future issues of *Inside Microsoft Excel*.

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